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## Germany

## Biotechnology

## German Farmers' Interest in Planting Bt-Corn 2004

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**Report Highlights:**

Currently, German farmers' interest in growing biotech corn is limited. The German Federal Ministry of Consumer Protection, Food and Agriculture is opposing biotechnology in food and feed production. The German Farmers' Association and the Bavarian parliament are advising farmers not to grow biotech crops before national liability regulations are straightened out. Corn borer infestation is high in a limited number of regions. Due to the small farm sizes in many areas of Germany, farmers fear cross pollination of biotech crops to conventional and organic corn crops. Total production area for biotech crops in 2004 is forecast at 500 hectares of Bt-corn.

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## German Farmers' Interest in Planting Bt-corn

**Summary:** Currently, German farmers' interest in growing biotech crops is limited. This is partly because of relatively low European corn borer infestation, and cross pollination risk with biotech varieties due to the small farm sizes in wide regions of Germany. Also, the hesitancy of the German Farmers' Association to promote biotechnology limits the interest of German farmers in these new varieties. The agricultural committee of the Bavarian parliament recently advised Bavarian farmers not to participate in the testing of biotech crop production before national liability rules are finalized. The general opposition of the German Federal Ministry of Consumer Protection, Food and Agriculture against biotechnology in food and feed production is generally known. The CDU, CSU and FDP (which are not part of Germany's coalition government) are the only political parties publicly expressing support for green biotechnology. The total production area for biotech crops in 2004 is forecast at 500 hectares of Bt corn.

Of the roughly 1.5 million hectares of corn area in Germany, about 350,000 hectares are at risk of infestation with the European corn borer. The primary risk areas are in southern Germany reaching as far north as the Oderbruch in Brandenburg. All of these regions have a warmer climate, relative to other corn production regions in Germany.

	Corn area	Risk area
Bayern	390,000	<200,000
Baden-Wuerttemberg	137,000	60,000
Sachsen-Anhalt	67,000	60,000
Hessen	30,000	20,000
Brandenburg	103,000	20,000
Sachsen	70,000	3,000
Nordrhein-Westfalen	206,000	1,000
Rheinland-Pfalz	23,000	1,000

Source: Study of the German biotech industry, 2003

Not all of these 350,000 hectares have a high risk for corn borer infestation, but the infestation level is increasing annually. Another risk to corn production, the corn rootworm, is approaching Germany from the southwest from France. German farmers fear that this pest will arrive in Germany in 2004 or 2005.

To protect against the corn borer, farmers apply different strategies. The most successful strategy in regions with a low level of infestation is crop rotation plus careful plowing of the fields. Before plowing, the corn stalks in the fields are chopped to small pieces to reduce the survival chances of the borer larvae. In regions with somewhat higher infestation levels, farmers make use a trichogramma strategy, a biological form of pest control. This strategy is not successful in intensive borer infestation regions. Here, only the application of insecticides helps farmers to protect their crops. However, the problem with chemical application is that farmers either have to have high clearance tractors/sprayers or make use of helicopter spraying. Both methods are relatively cost intensive. In addition, helicopter spraying is strongly opposed by the German public because of the high chemical drift potential in this densely populated country.

During the past several years, several hundred hectares of Bt-corn varieties were planted annually for test purposes in Germany. In most cases, the harvested corn was used as cattle feed on the corn producing farm. These field tests by biotech corn seed producers revealed that insecticide application and Bt-corn varieties achieved the highest levels of crop protection.

The region with the most intense corn borer infestation is Baden-Wuerttemberg. Theoretically, farmers here would profit most if they would plant Bt-varieties. However, since farms and fields are comparatively small in most of Baden-Wuerttemberg, farmers are unwilling to take the liability risk resulting from GMO presence in organic crops or other conventional crops labeled as free of GMOs. In addition, this region is Germany's most important seed corn production area. Seed corn producers want to avoid any contact with biotech corn since this would make their seeds unmarketable.

Basically the only farmers who are relatively open to Bt-corn production are those with large farms, which are mostly located in eastern Germany, where corn borer infestations are very spotty with relatively low intensity. One exception to this is the intensive infestation in the Oderbruch in State of Brandenburg. These farmers have the option of surrounding their Bt-corn areas with other conventional varieties to avoid cross-pollination of neighboring farmers' fields. There are also large farms in locations with high corn borer infestation levels in Baden-Wuerttemberg, in the Rottal in Bavaria, in Hessen, and in parts of Sachsen-Anhalt that are generally interested in using modern Bt-corn varieties.

Through an annual application, the German Federal Seed Register approves a limited import of corn seed varieties containing EU approved biotech events. In 2004, a special import application was approved for 30.5 tons of seed with the biotech event MON810 (Bt-corn), which is sufficient for planting of about 1,000 hectares, however, we expect that only half of the 30.5 tons will be imported. Approval was granted for seven varieties, which are already in the multi-year seed registration process but not yet approved. The maximum volume of approved seed imports per variety ranges between 0.5 and 5.0 tons depending on the number of performed test years. These biotech varieties may be freely planted in Germany and do not have to be reported to any public biotech register at the moment. Normally, these plantings are monitored by the developer of the seed and/or the biotech event.

In 2004, about 100 hectares of Bt-corn are expected to be planted in the framework of a production research program on a few farms in Sachsen-Anhalt. The resulting crop will be used for animal feed on the farms. The University of Halle in cooperation with the State of Sachsen-Anhalt is going to monitor the program to gather information about cross pollination and the needed rules for coexistence of neighboring biotech and non-biotech production. The biotech seed industry together with the State of Sachsen-Anhalt has provided a liability fund of Euro 240 million to cover possible damage claims resulting from cross-pollination.

In addition to the Sachsen-Anhalt production program, another 400 hectares are likely to be planted to Bt-corn varieties in other regions of Germany. This biotech corn production is purely commercial, but will be monitored by the biotech industry. Most of the resulting crop will be used for feed directly on the farm. However, some of the biotech grain could be used for brewing beer in Sweden.

Rapeseed production is the most important oilseed crop in Germany. However, its high potential for cross-pollination into neighboring fields presently limits German farmers' interest in biotech rapeseed production. Plant breeding experts believe that chances for the use of biotech varieties might be greater in sugar beet and potato production since pollination in these crops is extremely limited. Herbicide and disease resistant beet varieties are already in the EU application pipeline.

Many farmers interested in producing biotech crops fear that their crops could be targeted for field destruction by biotech opponents. Neighboring farmers may confront them with their general opposition to green biotechnology; creating some fear of being stigmatized. In addition to these direct fears, the German Farmers' Association recently advised their

farmers not to participate in tests for biotech crop production. The Farmers' Association claims that the liability rules are not yet finalized, creating an uncertain financial risk for biotech farmers. Also, the agricultural committee of the Bavarian parliament recently advised Bavarian farmers not to participate in any biotech crop test production before the liability rules are finalized.

The German government is currently in the process of finalizing the national genetechonology law, which includes regulations covering the coexistence of biotech production, non-biotech production and organic production in German agriculture and liability for biotech crop and feed production. The German government perceives biotech crops as a potential financial risk to those farmers who wish to produce and market crops free from traces of biotech varieties. The current draft requires the biotech farmers to publicly register fields planted to biotech crops. In addition, farmers producing biotech crops are liable for any financial loss to near-by non-biotech farmers, resulting from biotech outcrossing/content. The biotech farmer also carries the burden of proof that he did not cause any alleged damage, as opposed to the complainant proving that the biotech farmer caused the damage.

Biotech farmers and the biotech industry will be required to create a fund which covers all potential financial losses resulting from the production of biotech crops. Legal experts claim that this liability requirement is highly questionable and might not hold up against a legal review.

The German conservative parties (CDU, CSU and FDP), which currently form the opposition in the Bundestag but hold the majority in the Bundesrat (the German Upper House), contest these excessive liability rules. Most recently the leading German opposition parties, the CDU and CSU, held a symposium on the opportunities of green biotechnology for German agriculture. In addition to the many technical presentations, opposition leader Angela Merkel gave a very supportive speech for biotech production, challenging the Federal government and stating that the proposed German genetech law is hostile for any major innovation in German agriculture. In view of all the hurdles for biotech production, German farmers are currently extremely hesitant to plant biotech crops.